


GENERAL NOTES

- Approximate location of existing mains are shown. The Contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted service. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer by the Contractor at the Contractor's expense.
- Topographic field surveys were performed on December 2004 by Dewberry & Davis, LLC.
- Horizontal and Vertical Survey Controls:  
The coordinates shown on the drawings are based on Maryland State Reference System NAD '83/91 as projected by Howard County Geodetic Control Stations Howard Co. B.M. 471B and Howard Co. B.M. 471C.  
All vertical controls are based on NAVD '88. Vertical control provided on the drawings is Ho. Co. Monument #37HC, N 556,364.08, E 1,375,513.20, Elev. 270.82.
- All pipe elevations shown are invert elevations unless otherwise noted on the plans.
- Clear all utilities by a minimum of 12". Clear all poles by 5'-0" minimum or tunnel as required unless otherwise noted. The owner has contacted the utility companies and has made arrangements for bracing of poles as shown on the drawings. In the event the Contractor's work requires the bracing of additional poles, any cost incurred by the owner for the bracing of additional poles or damages shall be deducted from monies owed the Contractor. The Contractor shall coordinate with the utility companies to schedule the bracing of the poles.
- For details not shown on the drawings, and for materials and construction methods, use Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction (Latest Edition). The Contractor shall have a copy of Volume IV on the job.
- Where test pits have been made on existing utilities, they are noted by the symbol  at the location of the test pit. A note or notes containing the results of the test pit or pits is included on the drawings or specifications. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the Contractor two (2) weeks in advance of construction operations at his own expense.
- Contractor shall notify the following utility companies or agencies at least five (5) working days before starting work shown on these plans:  
AT&T ..... 1-800-252-1133  
BGE - Contractor Services ..... 410-850-4620  
BGE - Emergency ..... 410-685-1400  
State Highway Administration ..... 410-531-5533  
Bureau of Utilities (DPW) ..... 410-313-4900  
Verizon ..... 1-800-743-0033 / 410-224-9210  
Colonial Pipeline Co. .... 410-795-1390  
Miss Utility ..... 1-800-257-7777
- Trees and shrubs are to be protected from damage to the maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the Contractor.
- Contractor shall remove trees, stumps and roots along the line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.
- The Contractor shall notify the Bureau of Highways, Howard County at (410) 313-7450 at least five (5) working days before any open cut, boring/jacking or trenchless installation operation in or of any county roads for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPW requirements per Section 18.114(a) of the Howard County Code.
- The Contractor is responsible for contacting the various businesses and coordinating his work activities so as not to negatively impact connected customers. The installation of water main shall cause a minimum of disturbance to the existing businesses and notification to the businesses of any "interruptions of service" shall be the responsibility of the Contractor. The County requires that the Contractor notify each business affected, by letter or with door tags, of the impending service interruption at least 48 hours in advance of the planned interruption. In the event of an unplanned interruption, the Contractor will be responsible for notifying the businesses by "door to door" canvassing.
- The Contractor shall provide all necessary lines, grades and elevations, and cut sheets shall be prepared based on the lines and grades shown on the Contract drawings.

RESTORATION SCHEDULE			
STATION	TO STATION	DISTANCE	MATERIAL
WATER MAINS			
10+00	10+03±	10 L.F.±	ASPHALT PAVING/ CURB & GUTTER
20+18±	20+22.49		
10+03±	20+18±	1,015 L.F.±	SEED & MULCH

SURVEY CONTROL

B.M. #1

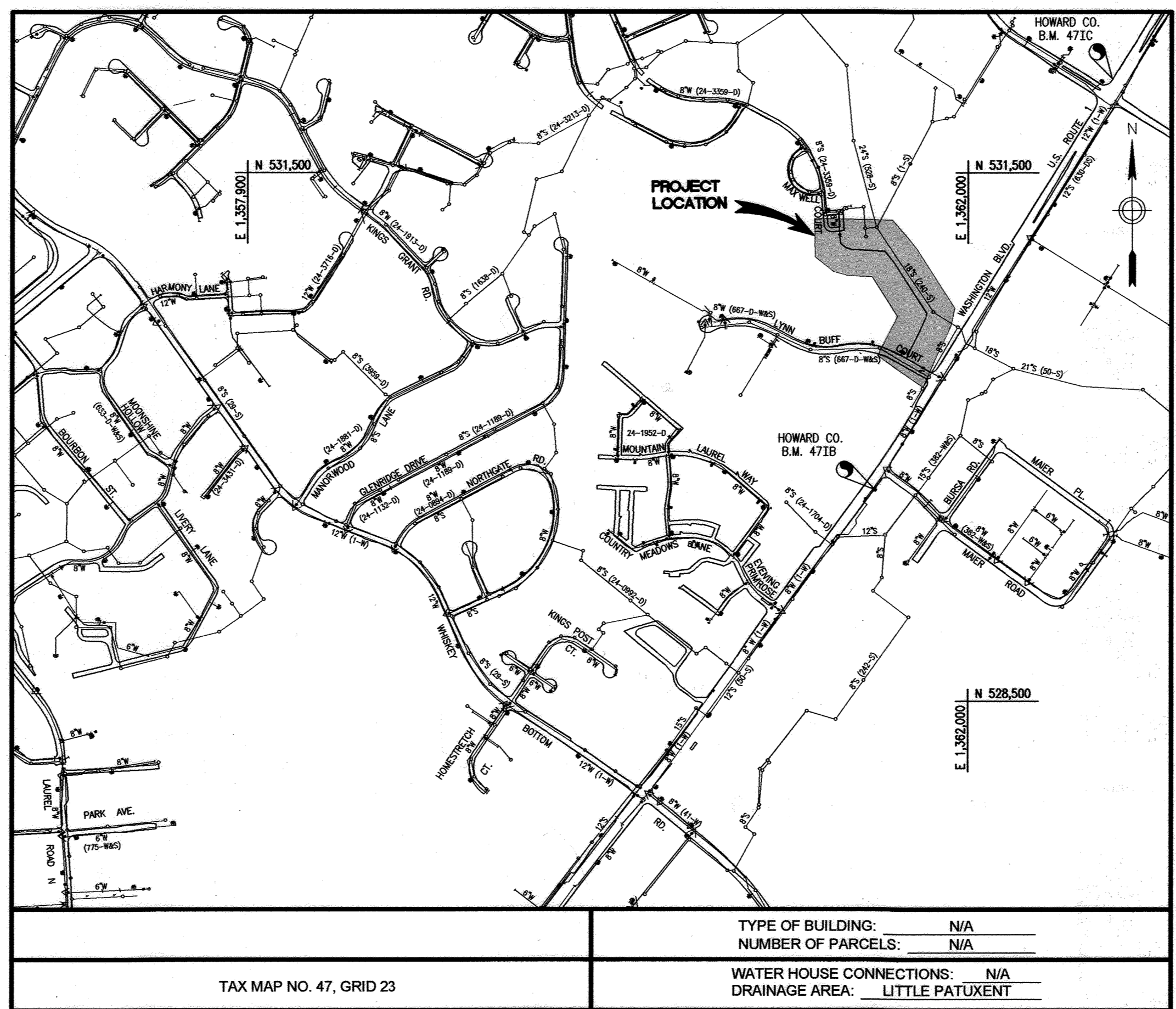
HOWARD CO. B.M. 471B  
NAD 83 (1981): N 529,701.572 E 1,361,469.770  
NAVD 88: EL. 179.917'

B.M. #2

HOWARD CO. B.M. 471C  
NAD 83 (1981): N 532,036.869 E 1,362,819.070  
NAVD 88: EL. 188.249'

WATER MAIN NOTES

- Except as indicated on the Plans and noted above, all public water mains shall be polyvinylchloride (PVC) pipe meeting the requirements of AWWA C900 DR18, pressure Class 150 and the Howard County Design Manual Volume IV - Standard Specifications and Details for Construction and all subsequent amendments thereto.
- Tops of water mains shall have a minimum of 3'-6" of cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be buttressed or anchored with concrete in accordance with Standard Details unless otherwise provided for on the drawings.
- Fire Hydrants shall be set to the bury line elevations shown on the drawings. All fire hydrants shall be installed in accordance with Standard Details. Soil around the fire hydrant shall be compacted in accordance with Section 1000 and Section 1005 of the Howard County Standard Specifications.
- The Contractor shall not operate any water main valves on the existing water system.
- Fire Hydrants to be removed shall be returned to:  
Howard County Bureau of Utilities  
8250 Old Montgomery Road  
Columbia, Md. 21045  
410-313-4900
- The Contractor shall notify the Howard County Bureau of Utilities at least fifteen (15) days prior to any water main shut downs.
- All ductile iron pipes to be used on the public water system shall be class 54. Ductile iron fittings shall meet the requirements of the Howard County Design Manual Volume IV - Standard Specifications and Details for Construction and shall be exterior epoxy coated in accordance with AWWA C116.
- All water house connections shall be copper meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV - Standard Specifications and Details for Construction.
- All water mains constructed in fill areas shall be restrained ductile iron pipe class 54 meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV - Standard Specifications and Details for Construction.
- All water mains within casing pipes shall be restrained ductile iron pipes class 54 meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV - Standard Specifications and Details for Construction.



VICINITY MAP  
SCALE: 1" = 600'

# HAMMOND BRANCH WATER MAIN EXTENSION CAPITAL PROJECT W-8270 CONTRACT NO. 44-4258 8

APPURTENANCE TABLE				
VALVES	FROM	TO	DISTANCE	REMARKS
20+21	EX. FH	8" V.	15.5'	
T.S. & V.	EX. FH V.	8" V.	15.0'	
8" x 8"	TEST STA. #1	8" V.	4.0'	20+17 T.S. #1
17+74	BLOWOFF	4" V.	4.5'	
4" BLOWOFF V.	TEST STA. #2	4" V.	5.0'	
	EX. SMH 3014	4" V.	7.1'	
T.S. #1	EX. FH	T.S.	14.5'	
20+17	EX. FH V.	T.S.	15.0'	
8" V.	T.S.	4.0'		T.S. & V.
T.S. #2	BLOWOFF 17+74	T.S.	2.5'	
17+72	EX. SMH 3014	T.S.	67.0'	
BLOWOFF 4" V.	T.S.	5.0'		
T.S. #3	EX. SMH 3015	T.S.	232.0'	
14+00	21" END SECTION	T.S.	132.0'	E.S. WILL NOT BE REMOVED IN THE FUTURE
	12+68			
T.S. #4	EX. 8" V.	T.S.	17.0'	
10+19	EX. SD MH	T.S.	56.0'	
	CORNER HOUSE	T.S.	89.0'	LOT 92

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN
3	PROFILE
4	SEDIMENT AND EROSION CONTROL PLAN
5	SEDIMENT AND EROSION CONTROL DETAILS
6	SEDIMENT AND EROSION CONTROL NOTES & DETAILS
7	SEDIMENT AND EROSION CONTROL NOTES

QUANTITIES				
ITEM	UNIT	ESTIMATE	AS-BUILT	SUPPLIER
8" PVC WATER MAIN	L.F.	622	1008	BRS/JM EAGLE
8" DIP WATER MAIN	L.F.	486		
8" BLOWOFF	EA.	1		BRS/KUPFERLE
8"x8" TAPPING SLEEVE AND VALVE	EA.	1		BRS/J.C.M.
TEST STATION	EA.	3		BRS/DFW PLASTICS
FIRE HYDRANT	EA.	1		HD SUPPLY/MUELLER
NAME OF UTILITY CONTRACTOR: W.F. WILSON & SONS				
CHECK BOX				
AS-BUILT DATE: _____				

**AS-BUILT DRAWING**  
I HEREBY STATE TO THE BEST OF MY KNOWLEDGE AND PERSONAL BELIEF, THAT THE WORK SHOWN ON THESE PLANS WAS CONSTRUCTED TO THE LINES AND GRADES SHOWN.  
*Signature* P.E. NO. 15512 6-12-08  
DATE

BRS= BELAIR ROAD SUPPLY

AS BUILT

PROFESSIONAL CERTIFICATION  
I, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10959 EXPIRATION DATE: MAY 2010  
*Signature* 10-20-08  
Date  
Signature of Engineer

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Signature* 11/10/08  
DIRECTOR OF PUBLIC WORKS DATE

*Signature* 10/30/08  
CHIEF, BUREAU OF ENGINEERING DATE

*Signature* 10/30/08  
CHIEF, BUREAU OF UTILITIES DATE

*Signature* 10/30/08  
CHIEF, UTILITY DESIGN DIVISION DATE

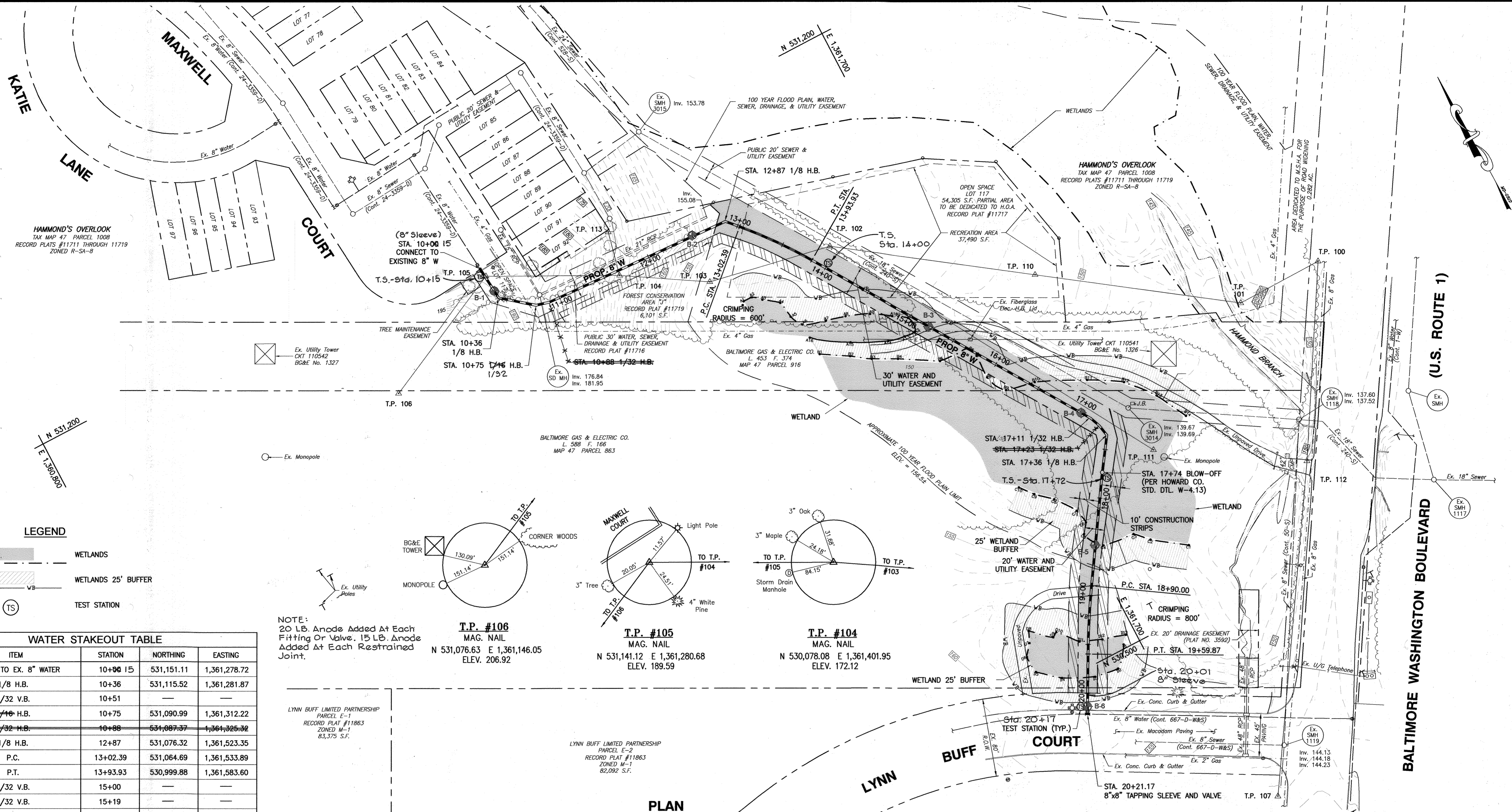
**Dewberry**  
Dewberry & Davis LLC  
3106 LORD BALTIMORE DRIVE  
SUITE 110  
BALTIMORE, MD 21244-2662  
410.265.9500  
FAX: 410.265.8875

DES:	SMS
DRN:	AZW
CHK:	RJB
DATE:	
CD	1 AS BUILT
BY	NO.
REVISIONS	
DATE	6-11-08

TITLE SHEET  
600' SCALE MAP NO. 47  
BLOCK NO. 23

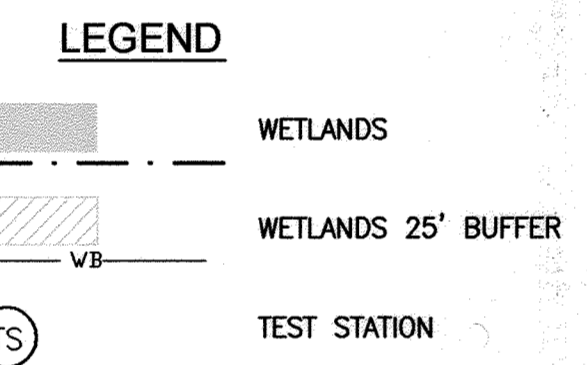
HAMMOND BRANCH  
WATER MAIN EXTENSION  
CAPITAL PROJECT W-8270  
CONTRACT 44-4258 8  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE SHOWN  
SHEET 1 OF 7



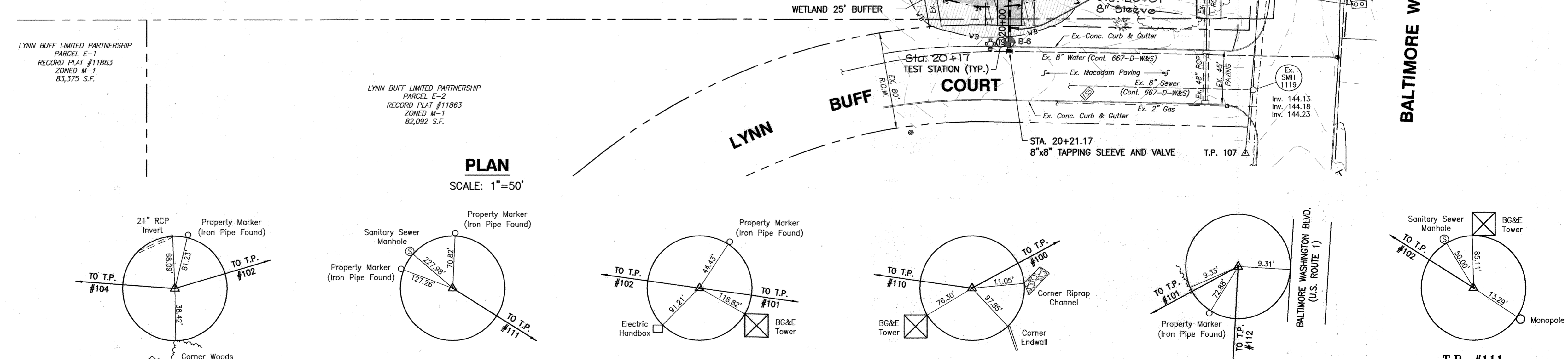
HAMMOND'S OVERLOOK  
 EX. MAP 47 PARCEL 1008  
 RECORD PLATS #11711 THROUGH 11719  
 ZONED R-SA-B

N 531,200  
 E 1,361,200



WATER STAKEOUT TABLE			
ITEM	STATION	NORTHING	EASTING
CONNECT TO EX. 8" WATER	10+00 15	531,151.11	1,361,278.72
1/8 H.B.	10+36	531,115.52	1,361,281.87
1/32 V.B.	10+51	—	—
1/32 H.B.	10+75	531,090.99	1,361,312.22
<del>1/32 H.B.</del>	<del>10+80</del>	<del>531,007.37</del>	<del>1,361,325.32</del>
1/8 H.B.	12+87	531,076.32	1,361,523.35
P.C.	13+02.39	531,064.69	1,361,533.89
P.T.	13+93.93	530,999.88	1,361,583.60
1/32 V.B.	15+00	—	—
1/32 V.B.	15+19	—	—
1/32 H.B.	17+11	530,724.87	1,361,760.87
<del>1/32 H.B.</del>	<del>17+23</del>	<del>530,714.87</del>	<del>1,361,764.87</del>
1/8 H.B.	17+36	530,701.46	1,361,767.62
8" BLOWOFF	17+74	530,670.06	1,361,745.91
1/32 V.B.	18+84	—	—
P.C.	18+90.00	530,572.51	1,361,682.31
1/32 V.B.	19+27	—	—
P.T.	19+59.87	530,512.45	1,361,646.78
8" x 8" TAPPING SLEEVE AND VALVE	20+21.17	530,458.38	1,361,617.90

NOTE:  
 20 LB. Anode Added At Each Fitting Or Valve. 15 LB. Anode Added At Each Restrained Joint.



**PROFESSIONAL CERTIFICATION**  
 I, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10959, EXPIRATION DATE: MAY 2010.  
 Signature of Engineer: [Signature] Date: 10-20-08

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

**Dewberry**  
 Dewberry & Davis LLC  
 3108 LORD BALTIMORE DRIVE  
 SUITE 110  
 BALTIMORE, MD 21244-2662  
 410.265.9500  
 FAX: 410.265.8875



DES:	SMS
DRN:	AZW
CHK:	RJB
DATE:	10/30/08

PLAN

HAMMOND BRANCH  
 WATER MAIN EXTENSION  
 CAPITAL PROJECT W-8270  
 CONTRACT 44-4259

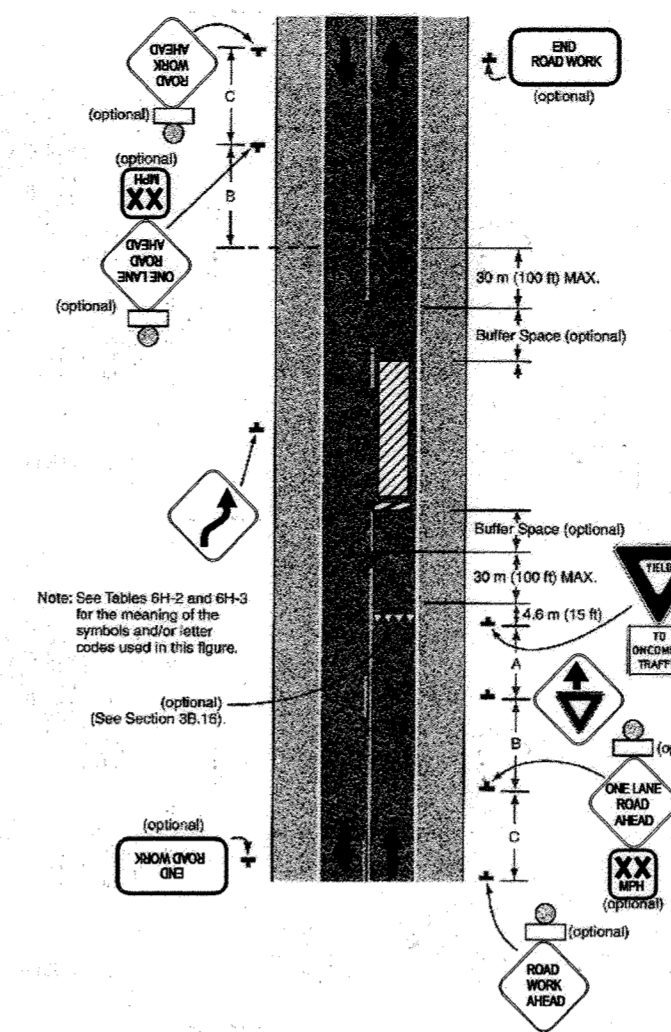
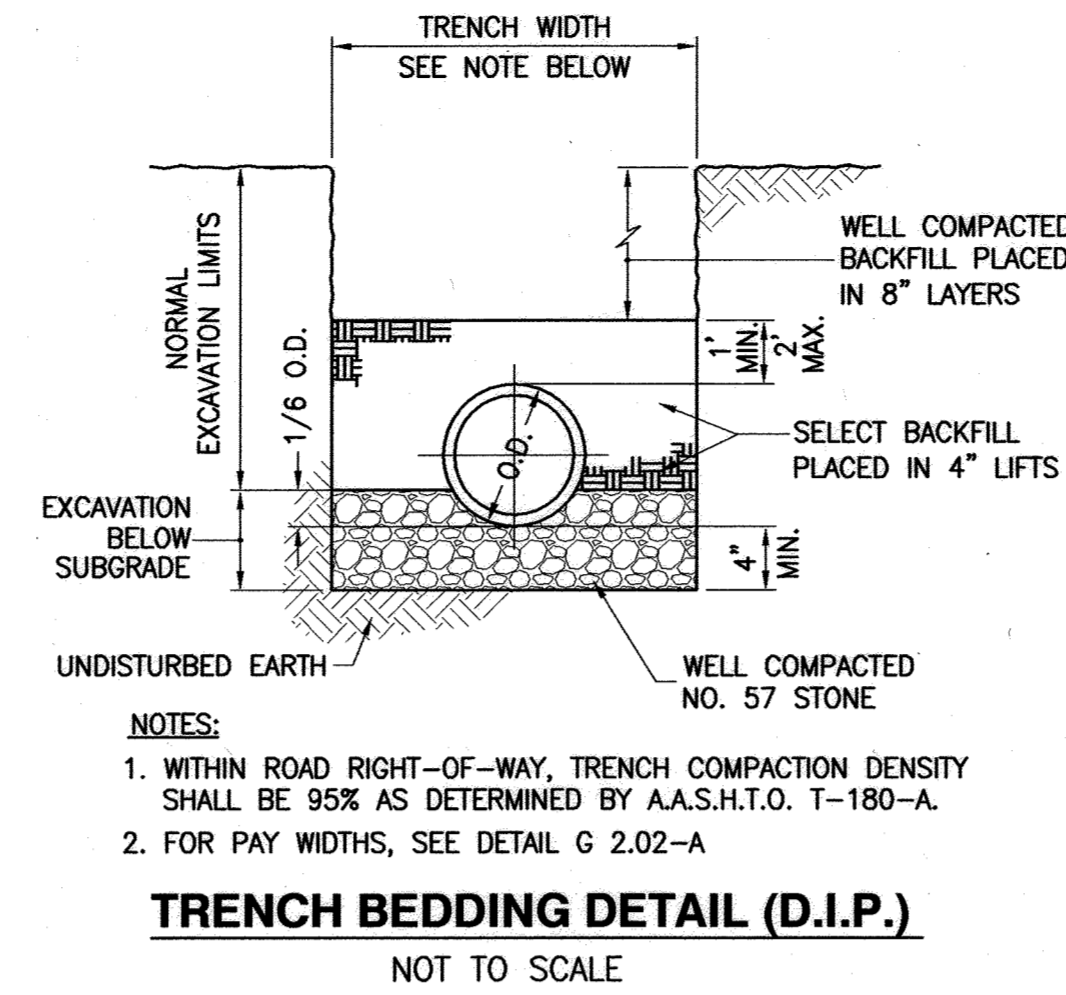
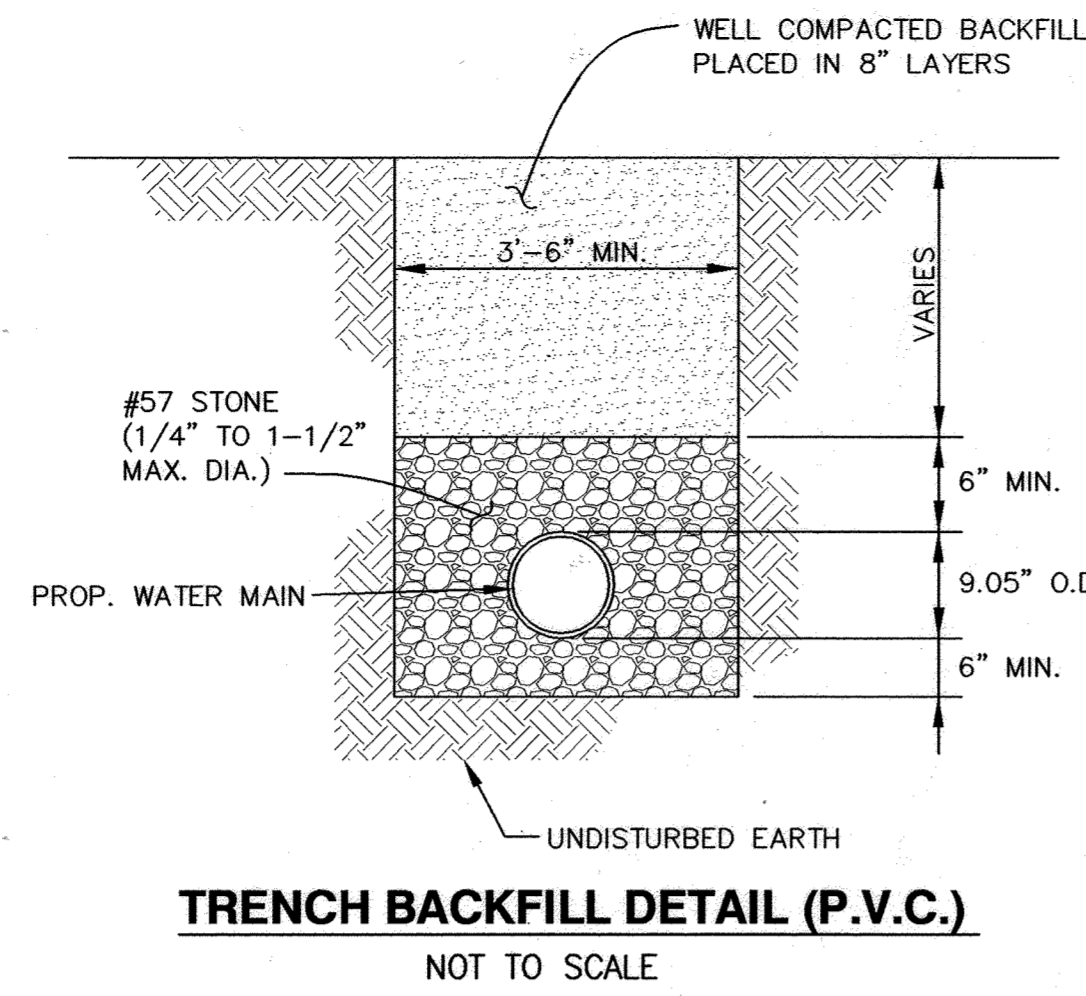
SCALE:  
 SHOWN  
 SHEET  
 2 OF 7

ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND

AS BUILT

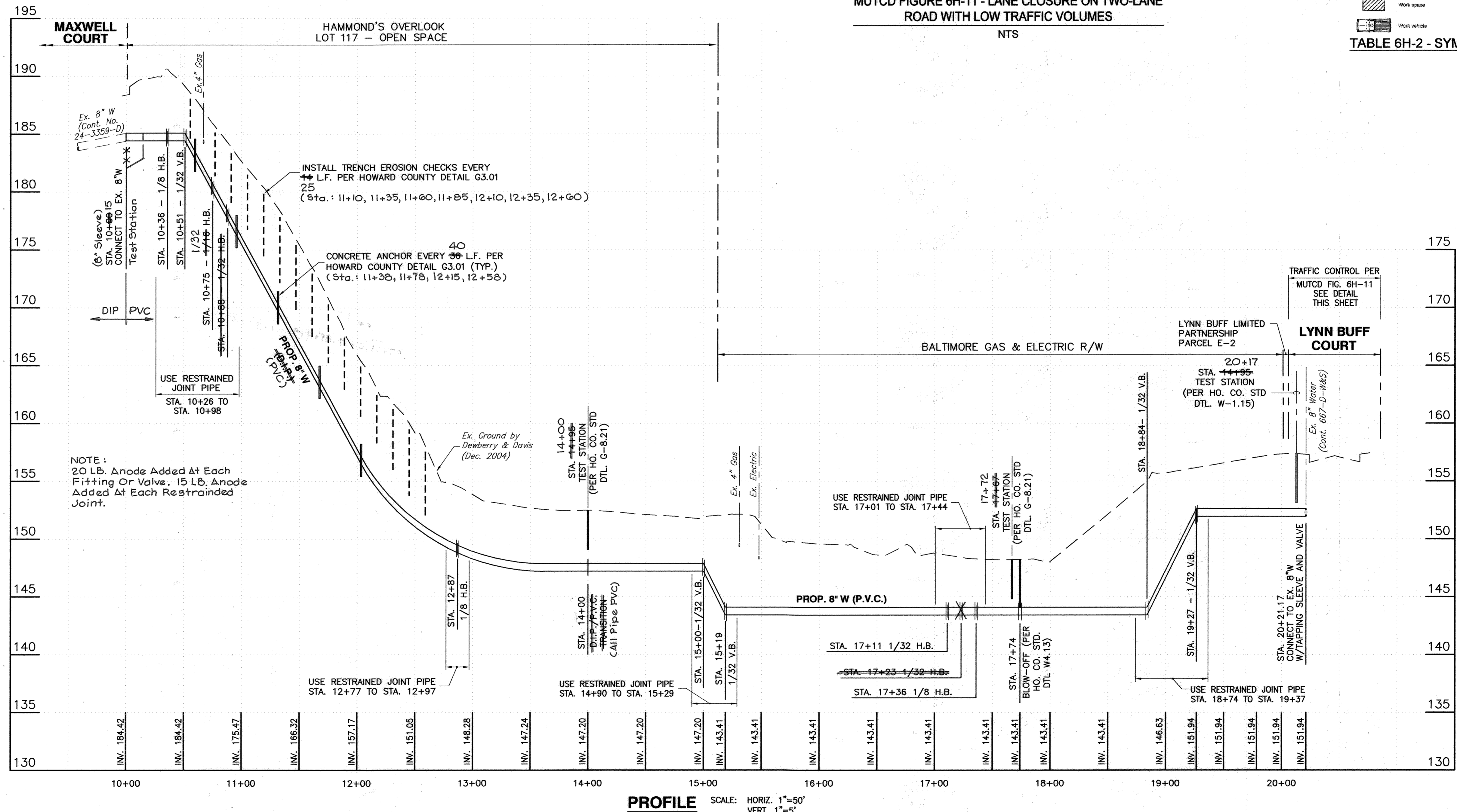
**TABLE 6H-3**  
MEANING OF LETTER CODES ON DIAGRAMS

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (LOW SPEED)	100 LF	100 LF	100 LF
URBAN (HIGH SPEED)	350 LF	350 LF	350 LF
RURAL	500 LF	500 LF	500 LF
EXPRESSWAY/FREEWAY	1,000 LF	1,500 LF	2,640 LF



**TABLE 6H-2 - SYMBOLS**

- Arrow panel
- Arrow panel support or trailer (shown facing down)
- Changeable message sign or support trailer
- Channelizing device
- Crash Cushion
- Direction of temporary traffic detour
- Direction of traffic
- Flagger
- High level warning device (Flag tree)
- Luminaire
- Pavement markings that should be removed for a long term project
- Sign (shown facing left)
- Surveyor
- Temporary barrier
- Temporary barrier with warning lights
- Traffic or Pedestrian signal
- Truck mounted attenuator
- Type III Barricade
- Warning lights
- Work space
- Work vehicle



**PROFESSIONAL CERTIFICATION**  
I, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10959 EXPIRATION DATE: MAY 2010  
*[Signature]* 10-20-08  
Signature of Engineer Date

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND  
11/2/08  
10/30/08  
10/30/08

**Dewberry**  
Dewberry & Davis LLC  
3106 LORD BALTIMORE DRIVE  
SUITE 110  
BALTIMORE, MD 21244-2662  
410.265.3500  
FAX: 410.265.8875



DES:	SMS
DRN:	AZW
CHK:	RJB
DATE:	CD 1 AS BUILT 6/11/09
BY:	NO.
REVISIONS:	

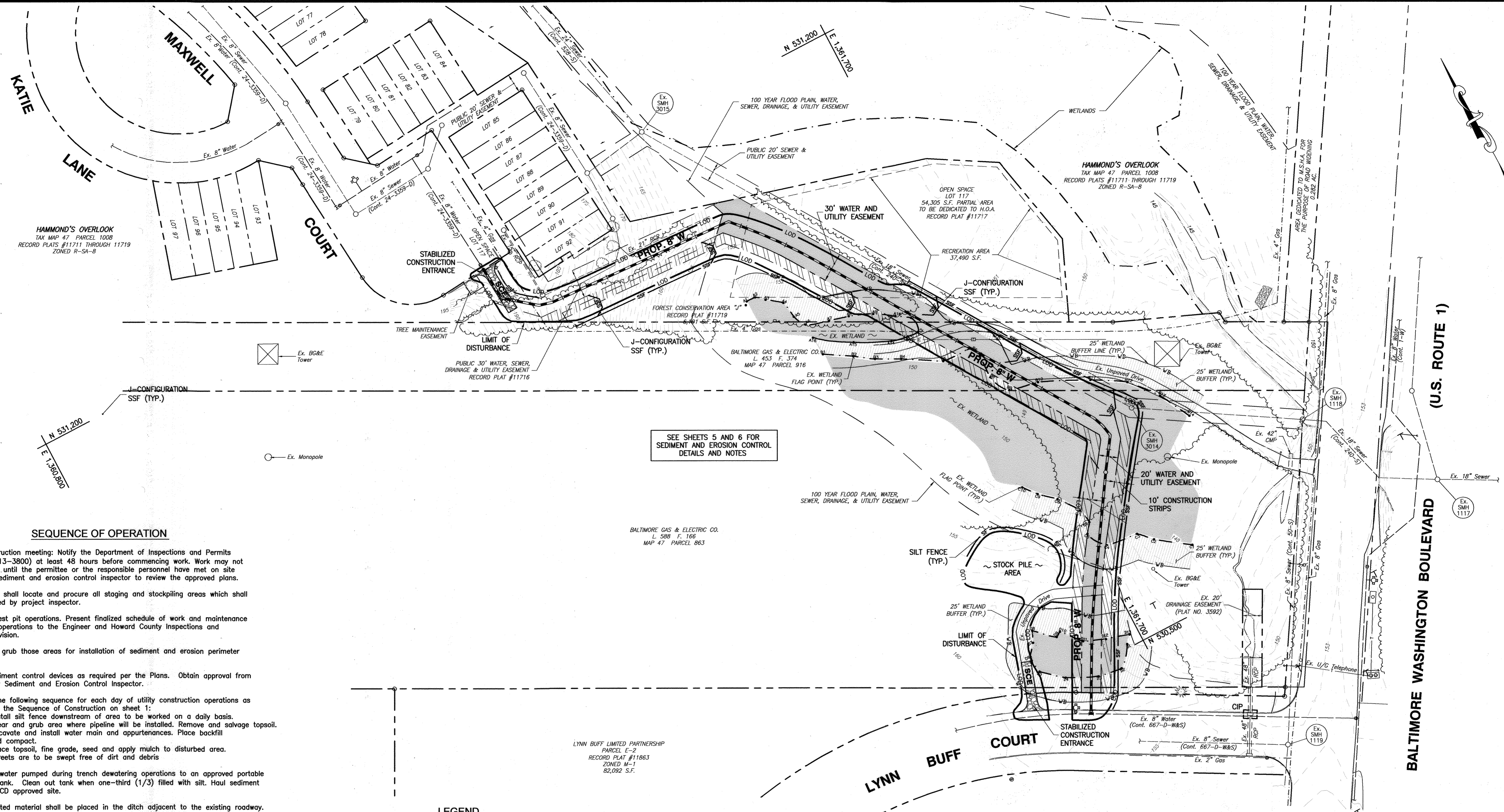
**PROFILE**  
600' SCALE MAP NO. 47  
BLOCK NO. 23

**HAMMOND BRANCH**  
WATER MAIN EXTENSION  
CAPITAL PROJECT W-8270  
CONTRACT 44-4259-4258  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE: SHOWN  
SHEET 3 OF 7

AS BUILT

R:\Projects\6068601 - Hammond Branch Water Main Extension\BID PLAN.dwg, 10/20/08 3:13:04 PM



**SEQUENCE OF OPERATION**

1. Pre-construction meeting: Notify the Department of Inspections and Permits (1-410-313-3800) at least 48 hours before commencing work. Work may not commence until the permittee or the responsible personnel have met on site with the sediment and erosion control inspector to review the approved plans.
2. Contractor shall locate and procure all staging and stockpiling areas which shall be approved by project inspector.
3. Conduct test pit operations. Present finalized schedule of work and maintenance of traffic operations to the Engineer and Howard County Inspections and Permits Division.
4. Clear and grub those areas for installation of sediment and erosion perimeter controls.
5. Install sediment control devices as required per the Plans. Obtain approval from the County Sediment and Erosion Control Inspector.
6. Perform the following sequence for each day of utility construction operations as outlined in the Sequence of Construction on sheet 1:
  - a. Install silt fence downstream of area to be worked on a daily basis.
  - b. Clear and grub area where pipeline will be installed. Remove and salvage topsoil.
  - c. Excavate and install water main and appurtenances. Place backfill and compact.
  - d. Place topsoil, fine grade, seed and apply mulch to disturbed area.
  - e. Streets are to be swept free of dirt and debris.
7. Direct all water pumped during trench dewatering operations to an approved portable sediment tank. Clean out tank when one-third (1/3) filled with silt. Haul sediment to an HCSCD approved site.
8. No excavated material shall be placed in the ditch adjacent to the existing roadway. The Contractor shall take precautions to prevent the disturbance of existing vegetated areas to the extent possible. Any existing vegetated areas disturbed as a result of the contractor's work operations shall be stabilized by the end of the work day.
9. Stabilize the top of all trenches by the end of each work day. All excess stockpiled soil remaining after refilling of the trench(s) shall be removed from the surface and hauled from the site by the end of the working day. The Contractor shall be responsible for obtaining all permits for his off-site stockpile areas. The Contractor shall also adequately clean all dirt and mud off the roadways by the end of each working day.
10. Stabilize any remaining disturbed areas as required.
11. Remove any remaining sediment controls after prior approval from Howard County Inspections and Permits Division. Fine grade and stabilize area formerly occupied by perimeter controls.

SEE SHEETS 5 AND 6 FOR SEDIMENT AND EROSION CONTROL DETAILS AND NOTES

**SEDIMENT AND EROSION CONTROL PLAN**

SCALE: 1"=50'

- LEGEND**
- PROPOSED WATER MAIN
  - LIMIT OF DISTURBANCE
  - SUPER SILT FENCE
  - SILT FENCE
  - CURB INLET PROTECTION
  - STABILIZED CONSTRUCTION ENTRANCE
  - WETLANDS
  - WETLANDS 25' BUFFER
  - 10' CONSTRUCTION STRIP

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Developer: *Ronald G. Lapson* Date: 10/30/08  
 Print Name: Ronald G. Lapson

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Engineer: *John R. Robertson* Date: 10-20-08  
 Print Name: R. JOSEPH BURNS, III

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John R. Robertson* 10/23/08  
 Howard Soil Conservation District Date

**PROFESSIONAL CERTIFICATION**  
 I, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10959, EXPIRATION DATE: MAY 2010.

*John R. Robertson* 10-20-08  
 Signature of Engineer Date

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND

*John R. Robertson* 11/10/08  
 DIRECTOR OF PUBLIC WORKS DATE

*Ronald G. Lapson* 10/30/08  
 CHIEF, BUREAU OF ENGINEERING DATE

*John R. Robertson* 10/30/08  
 CHIEF, BUREAU OF UTILITIES DATE

*Ronald G. Lapson* 10/30/08  
 CHIEF, UTILITY DESIGN DIVISION DATE

**Dewberry**  
 Dewberry & Davis LLC

3106 LORD BALTIMORE DRIVE  
 SUITE 110  
 BALTIMORE, MD 21244-2692  
 410.265.9500  
 FAX: 410.265.8875



DES:	SMS			
DRN:	AZW			
CHK:	RJB			
DATE:	CD 1	AS BUILT	6-11-09	
BY NO.				
REVISIONS				

**SEDIMENT AND EROSION CONTROL PLAN**

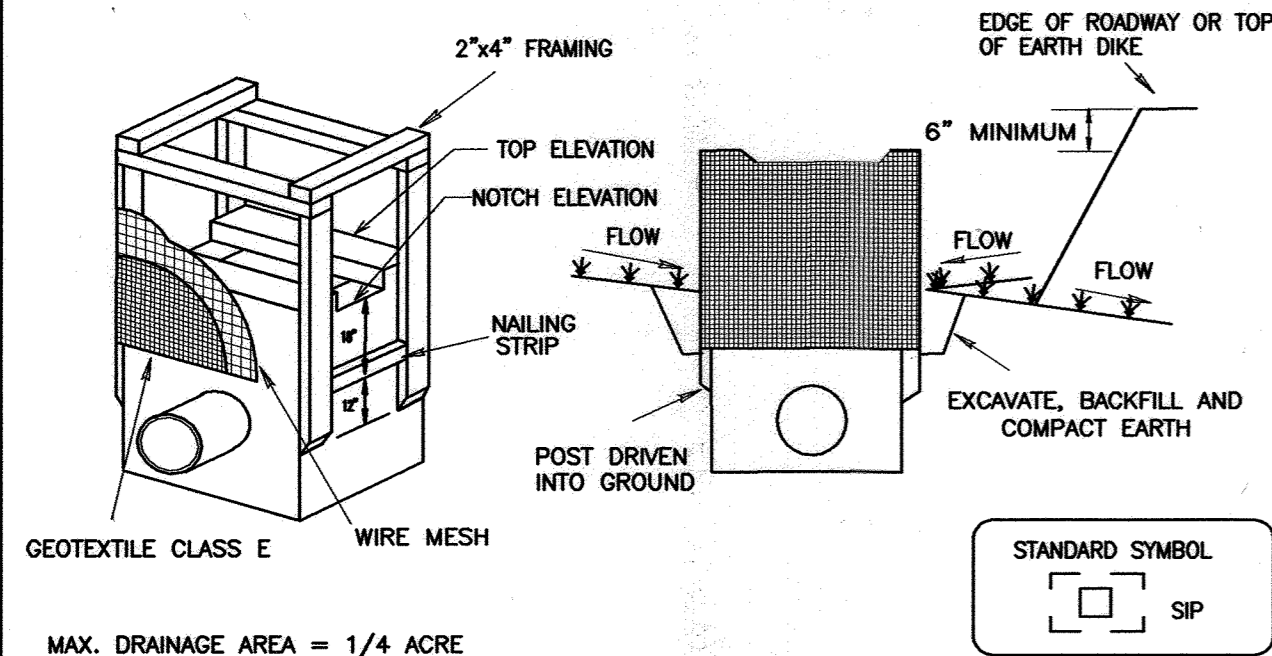
600' SCALE MAP NO. 47  
 BLOCK NO. 23  
 ELECTION DISTRICT NO. 6

**HAMMOND BRANCH WATER MAIN EXTENSION**  
 CAPITAL PROJECT W-8270  
 CONTRACT 44-4259-4258

HOWARD COUNTY, MARYLAND

AS BUILT ES-1  
 SCALE: SHOWN  
 SHEET 4 OF 7

**DETAIL 23A - STANDARD INLET PROTECTION**



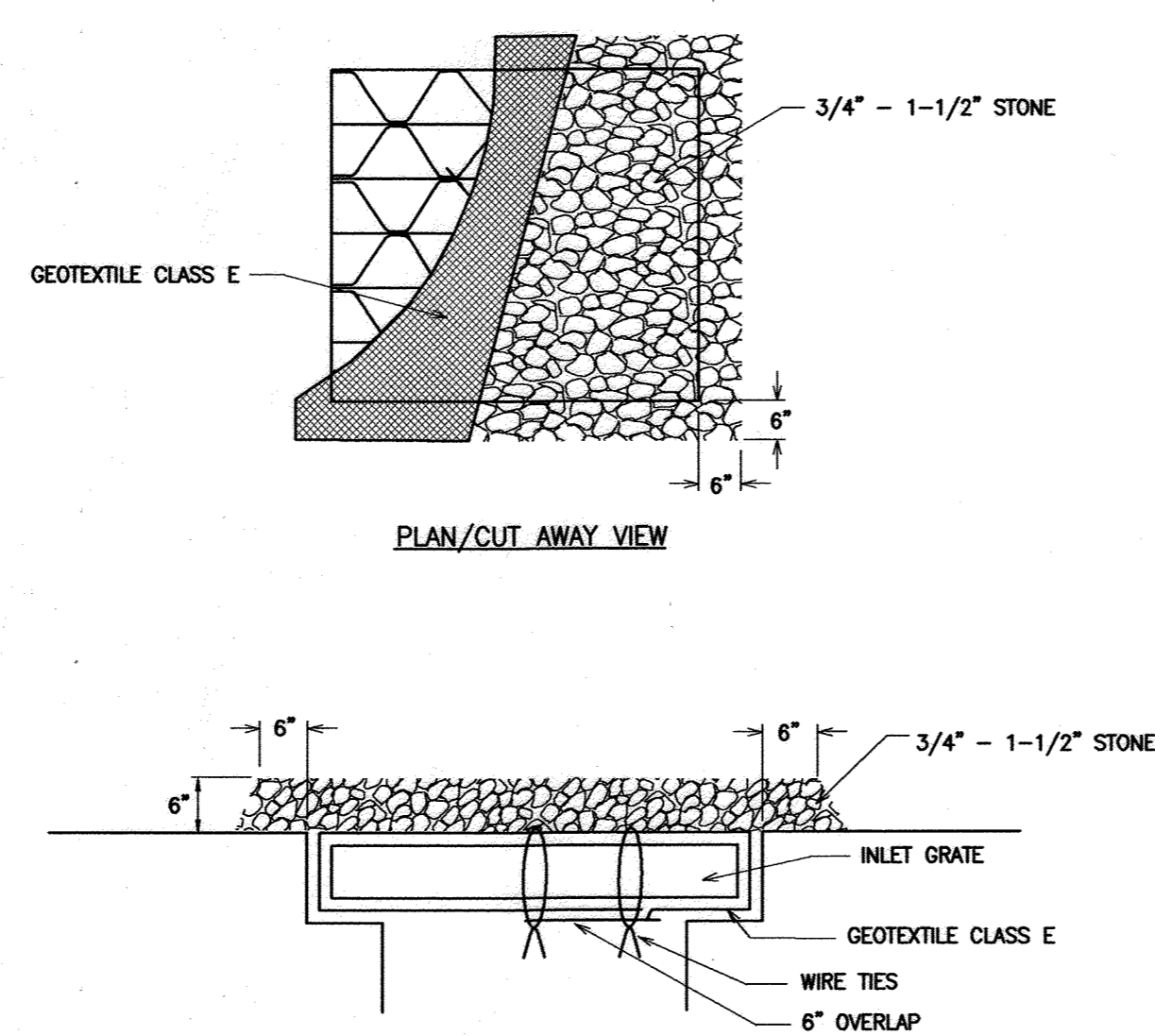
MAX. DRAINAGE AREA = 1/4 ACRE

**Construction Specifications**

- Excavate completely around the inlet to a depth of 18" below the notch elevation.
- Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.
- Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
- Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
- Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
- If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
- The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E - 16 - 5 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL 23B - AT GRADE INLET PROTECTION**



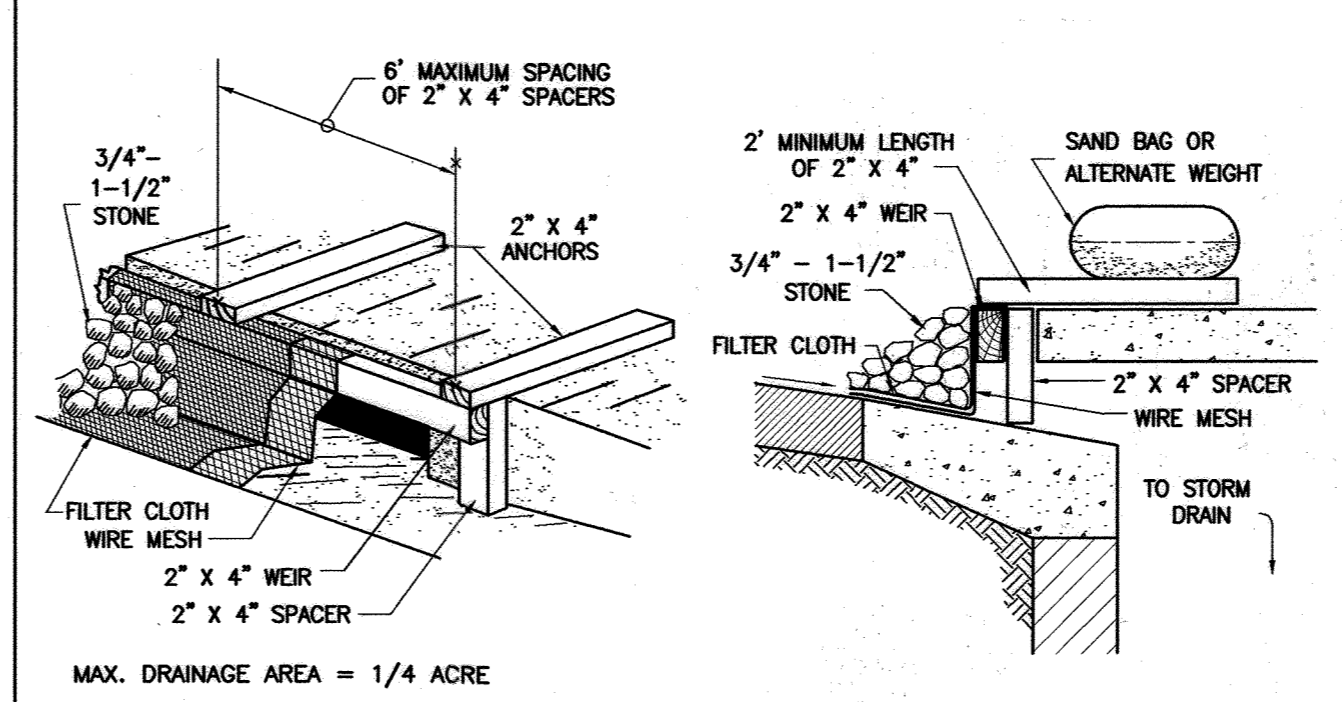
MAX. DRAINAGE AREA = 1/4 ACRE

**Construction Specifications**

- Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
- Place 3/4" to 1-1/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E - 16 - 5A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)**



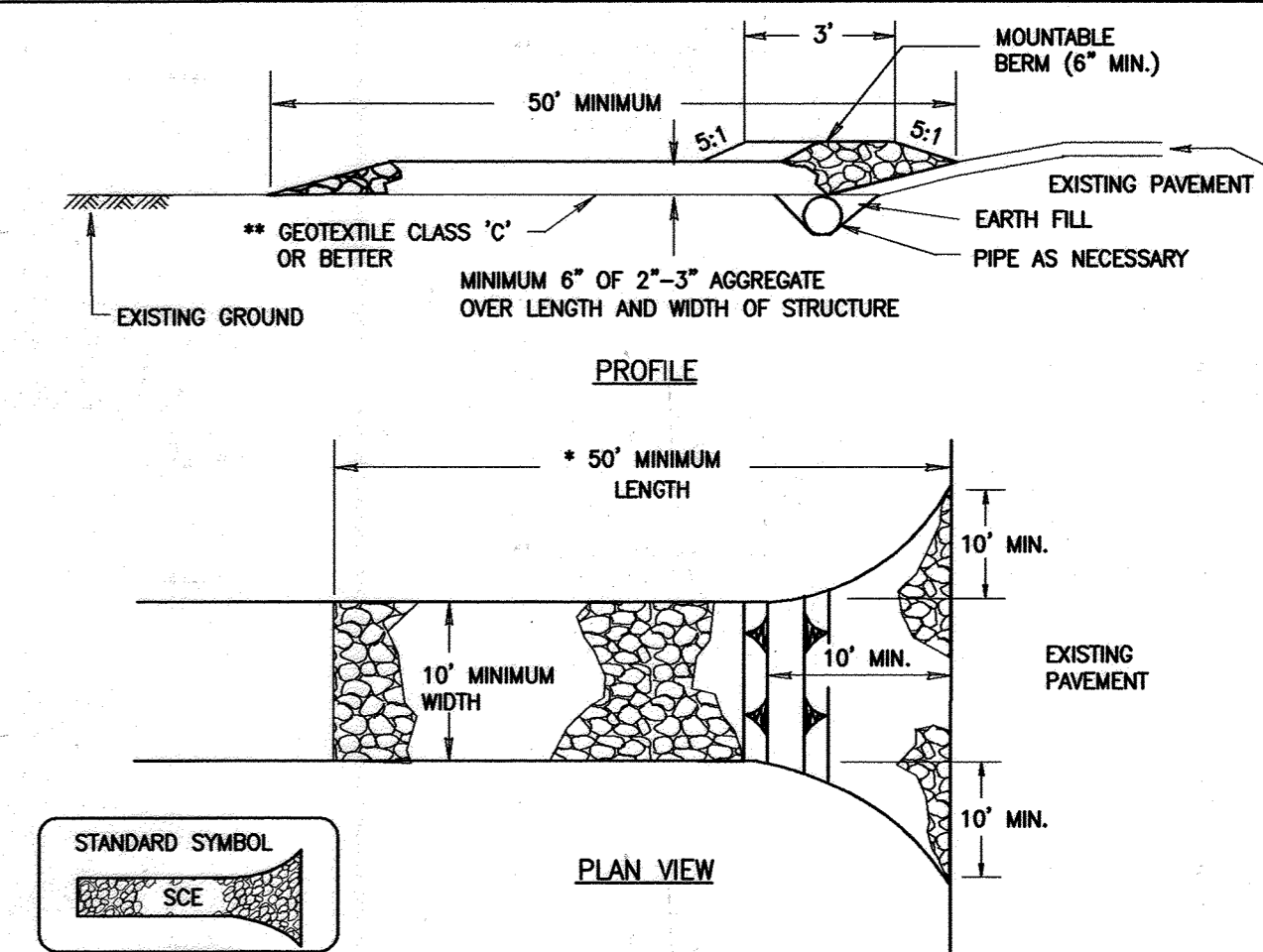
MAX. DRAINAGE AREA = 1/4 ACRE

**Construction Specifications**

- Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4") to the 2"x4" weir (measuring throat length plus 2") as shown on the standard drawing.
- Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over and securely attach it to the 2"x4" weir.
- Securely nail the 2"x4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4" apart).
- Place the assembly against the inlet throat and nail (minimum 2" lengths of 2"x4" to the top of the weir at spacer locations). These 2"x4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.
- The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.
- Form the 1/2"x1/2" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4"x1-1/2" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.
- This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
- Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E - 16 - 5B MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE**

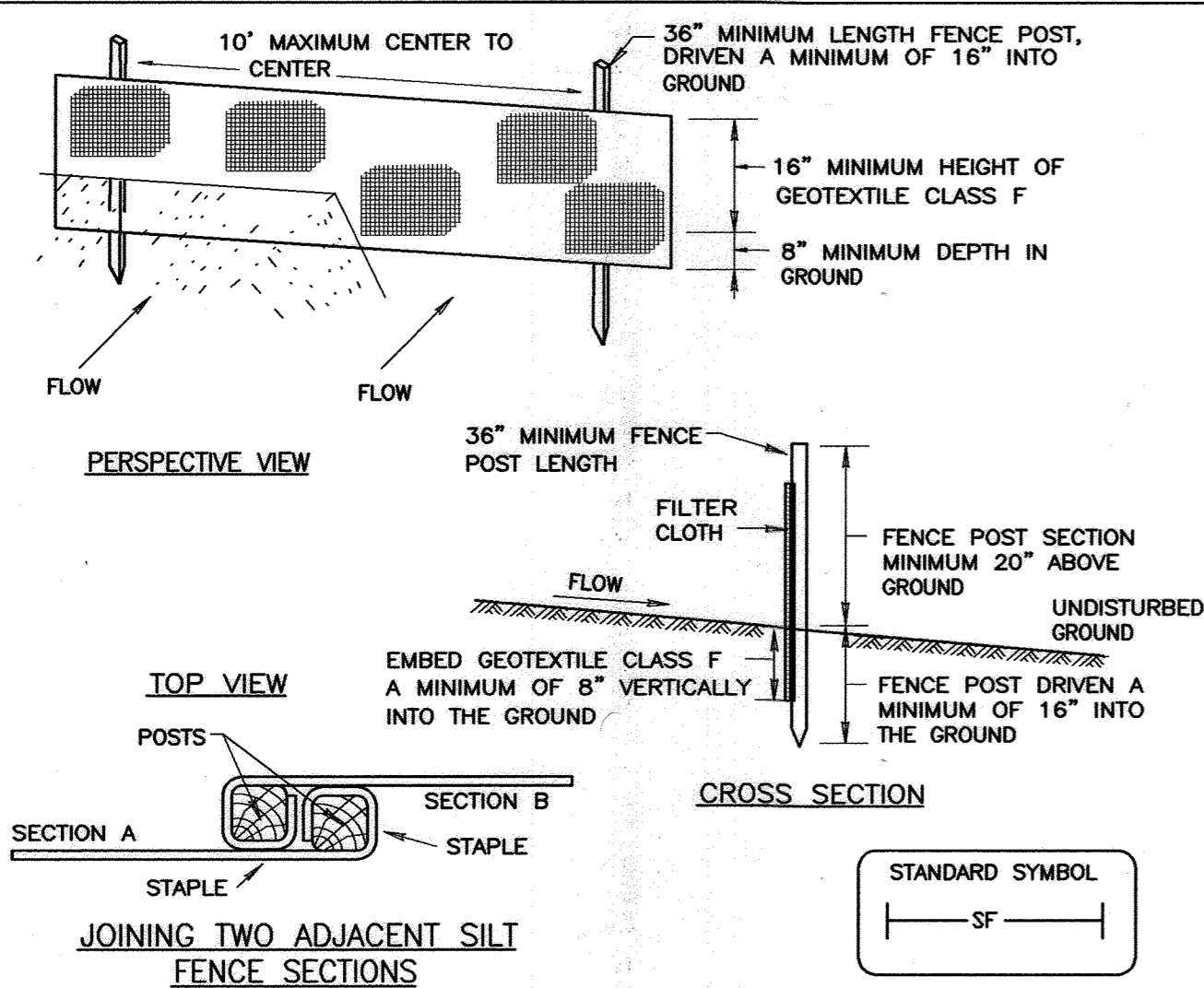


**Construction Specifications**

- Length - minimum of 50' (\*30' for single residence lot).
- Width - 10' minimum, should be flared at the existing ground to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. \*\*The plan approval authority may not require single family residences to use geotextile.
- Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F - 17 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL 22 - SILT FENCE**



**Construction Specifications**

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E - 15 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**SILT FENCE**

**Silt Fence Design Criteria**

Slope Steepness	Silt Fence Length	
	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E - 15 - 3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

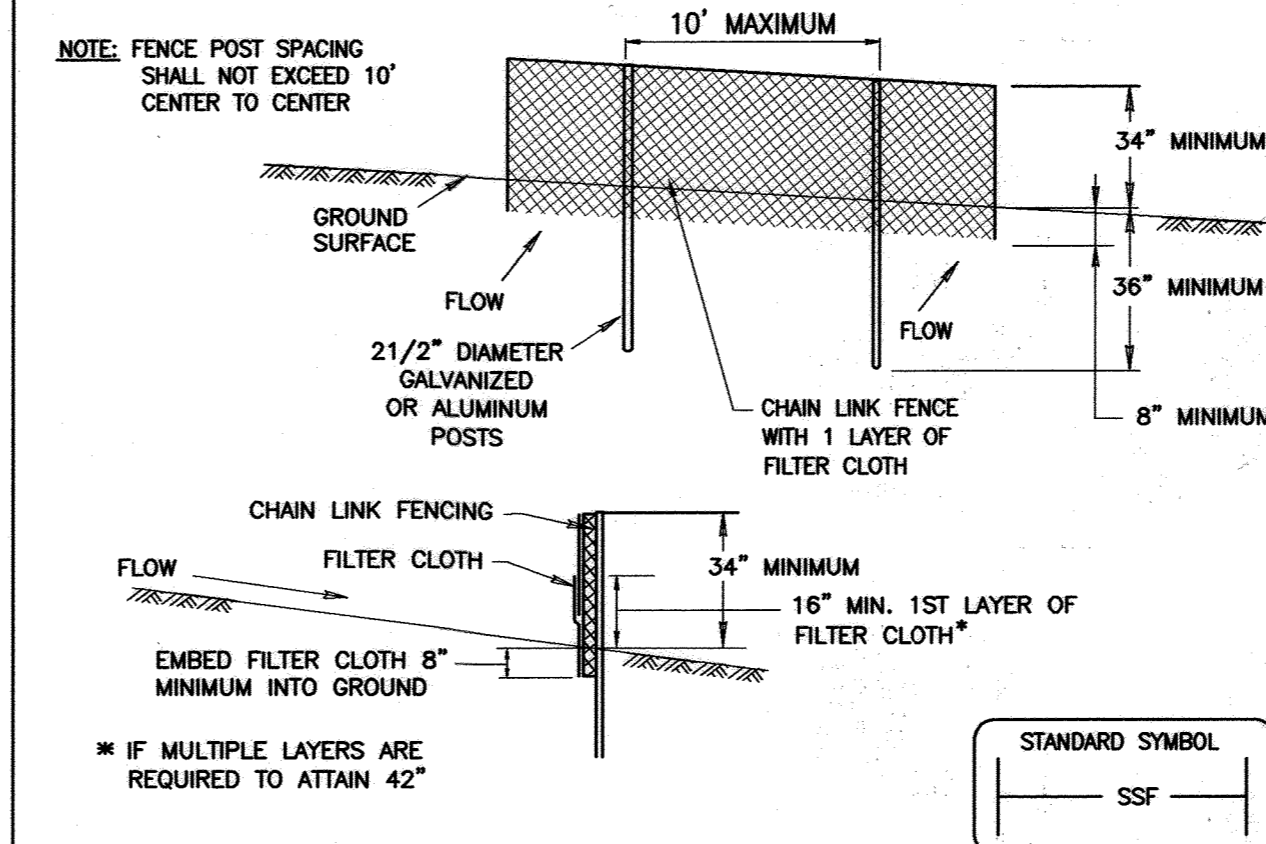
**SUPER SILT FENCE**

**Design Criteria**

Slope	Silt Fence Length	
	Slope Steepness	Slope Length (maximum)
0 - 10%	0 - 10:1	Unlimited
10 - 20%	10:1 - 5:1	200 feet
20 - 33%	5:1 - 3:1	100 feet
33 - 50%	3:1 - 2:1	100 feet
50% +	2:1 +	50 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H - 26 - 3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL 33 - SUPER SILT FENCE**



**Construction Specifications**

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6" fence shall be used, substituting 42" fabric and 6" length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt buldups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H - 26 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Ronald G. Lapsen* 10/30/08  
Signature of Developer Date

*Ronald G. Lapsen*  
Print Name

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

*Ronald G. Lapsen* 10-20-08  
Signature of Engineer Date

*R. JOSEPH BURNS, III*  
Print Name

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John R. Roberts* 11/3/08  
Howard Soil Conservation District Date

PROFESSIONAL CERTIFICATION  
I, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10959 EXPIRATION DATE: MAY 2010

*Ronald G. Lapsen* 10-20-08  
Signature of Engineer Date

AS BUILT

ES-2

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

*John G. Lapsen* 11/2/08  
DIRECTOR OF PUBLIC WORKS DATE

*Ronald G. Lapsen* 10/30/08  
CHIEF, BUREAU OF ENGINEERING DATE

*Shirley C. Lapsen* 11/30/08  
CHIEF, BUREAU OF UTILITIES DATE

*Clayton Lapsen* 10/30/08  
CHIEF, UTILITY DESIGN DIVISION DATE

**Dewberry**  
Dewberry & Davis LLC  
3106 LORD BALTIMORE DRIVE  
SUITE 110  
BALTIMORE, MD 21244-2862  
410.265.9500  
FAX: 410.265.8875



DES:	SMS
DRN:	AZW
CHK:	RJB
DATE:	6-11-09
BY NO.	CD I AS BUILT
REVISIONS	

**SEDIMENT AND EROSION CONTROL DETAILS**

DATE:	6-11-09
600' SCALE MAP NO. 47	
BLOCK NO. 23	

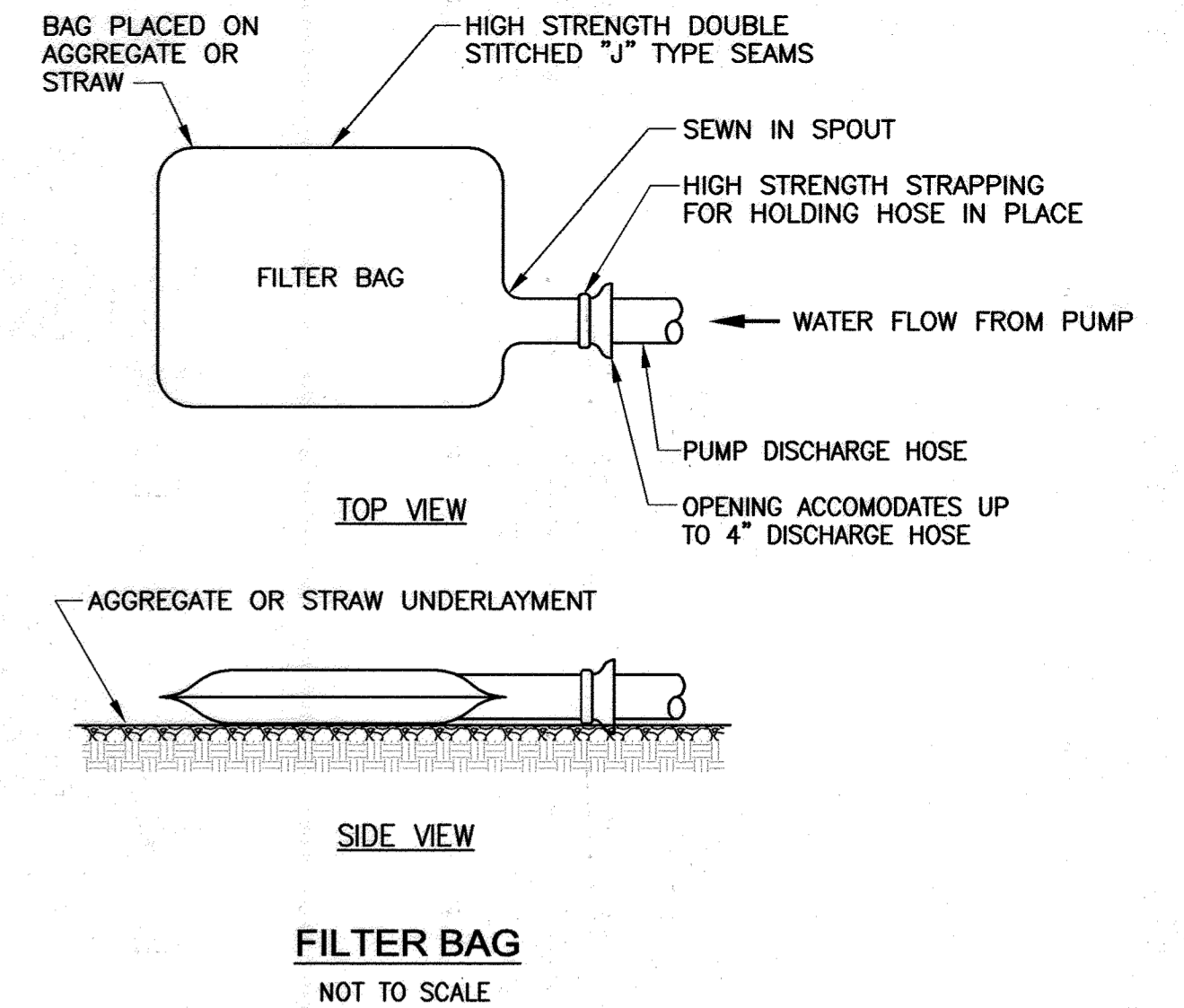
**HAMMOND BRANCH**  
WATER MAIN EXTENSION  
CAPITAL PROJECT W-8270  
CONTRACT 44-4259-4258

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

SCALE: SHOWN  
SHEET 5 OF 7

**BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS**

- No excess fill, construction material, or debris are to be stockpiled or stored in the wetlands or buffer.
- Place materials in a location and manner which does not adversely impact service or subsurface water flow into or out of the nontidal wetland.
- Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material or any other deleterious substance.
- Place heavy equipment on mats or suitably operate the equipment to prevent damage to the nontidal wetlands or buffer.
- Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands in excess nontidal wetlands lost under the original structure or fill.
- Rectify any nontidal wetlands temporarily impacted by any construction.
- All stabilization in the wetland and buffer shall be of the following recommended species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Setaria italica*), Barley (*Hordeum sp.*), Oats (*Avena sp.*), and/or Rye (*Secale cereale*). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Division. Kentucky 31 fescue shall not be utilized in the wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
- After installation has been completed, make post construction grades and elevations of nontidal wetlands the same as the original grades and elevations in temporarily impacted areas.
- To protect important aquatic species, in-stream work is prohibited as determined by the classification of the stream as follows: Class I waters in-stream work may not be constructed during the period of March 1 through June 15, inclusive, during any year.
- Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
- Culvert(s) shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.



**PERMANENT SEEDING NOTES**

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

**Seedbed Preparation:** Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

**Soil Amendments:** In lieu of soil test recommendations, use one of the following schedules:

- Preferred** - Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.)
- Acceptable** - Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

**Seeding** - For the periods March 1 - April 30, and August 1 - October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 - July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 - February 28, protect site by **Option 1** - Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring. **Option 2** - Use sod. **Option 3** - Seed with 60 lbs/acre Kentucky 30 Tall Fescue and mulch with 2 tons/acre well anchored straw.

**Mulching** - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrattled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

**Maintenance** - Inspect all seeding areas and make needed repairs, replacements and reseedings.

**TEMPORARY SEEDING NOTES**

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

**Seedbed preparation:** -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

**Soil Amendments:** -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

**Seeding:** -- For periods March 1 - April 30 and from August 15 - October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1 - August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 - February 28, protect site by apply 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

**Mulching:** -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrattled weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 ft. or higher, use 348 gal. per acre (8gal/1000 sq. ft.) for anchoring.

Refer to the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control\* for additional rates and methods not covered.

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Ronald G. Lepson* 10/30/08  
Signature of Developer Date

Ronald G. Lepson  
Print Name

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

*R. Joseph Burns, III* 10-20-08  
Signature of Engineer Date

R. JOSEPH BURNS, III  
Print Name

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John R. Rhoton* 11/13/08  
Signature of Engineer Date

Howard Soil Conservation District

**PROFESSIONAL CERTIFICATION**  
I, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10959 EXPIRATION DATE: MAY 2010

*Ronald G. Lepson* 10-20-08  
Signature of Engineer Date

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

*John A. K...* 11/2/08  
DIRECTOR OF PUBLIC WORKS DATE

*Ronald G. Lepson* 10/30/08  
CHIEF, BUREAU OF ENGINEERING DATE

*Shawn C...* 10/30/08  
CHIEF, BUREAU OF UTILITIES DATE

*Ch...* 10/30/08  
CHIEF, UTILITY DESIGN DIVISION DATE

**Dewberry**  
Dewberry & Davis LLC  
3106 LORD BALTIMORE DRIVE  
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BALTIMORE, MD 21244-2862  
410.285.8500  
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DES:	SMS				
DRN:	AZW				
CHK:	RJB				
DATE:	CD 1	AS BUILT		6-11-09	
	BY NO.	REVISIONS		DATE	

**SEDIMENT AND EROSION CONTROL NOTES & DETAILS**

600' SCALE MAP NO. 47 BLOCK NO. 23

**HAMMOND BRANCH WATER MAIN EXTENSION**  
CAPITAL PROJECT W-8270  
CONTRACT 44-4259 4258  
ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

**AS BUILT ES-3**

SCALE: SHOWN  
SHEET 6 OF 7

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